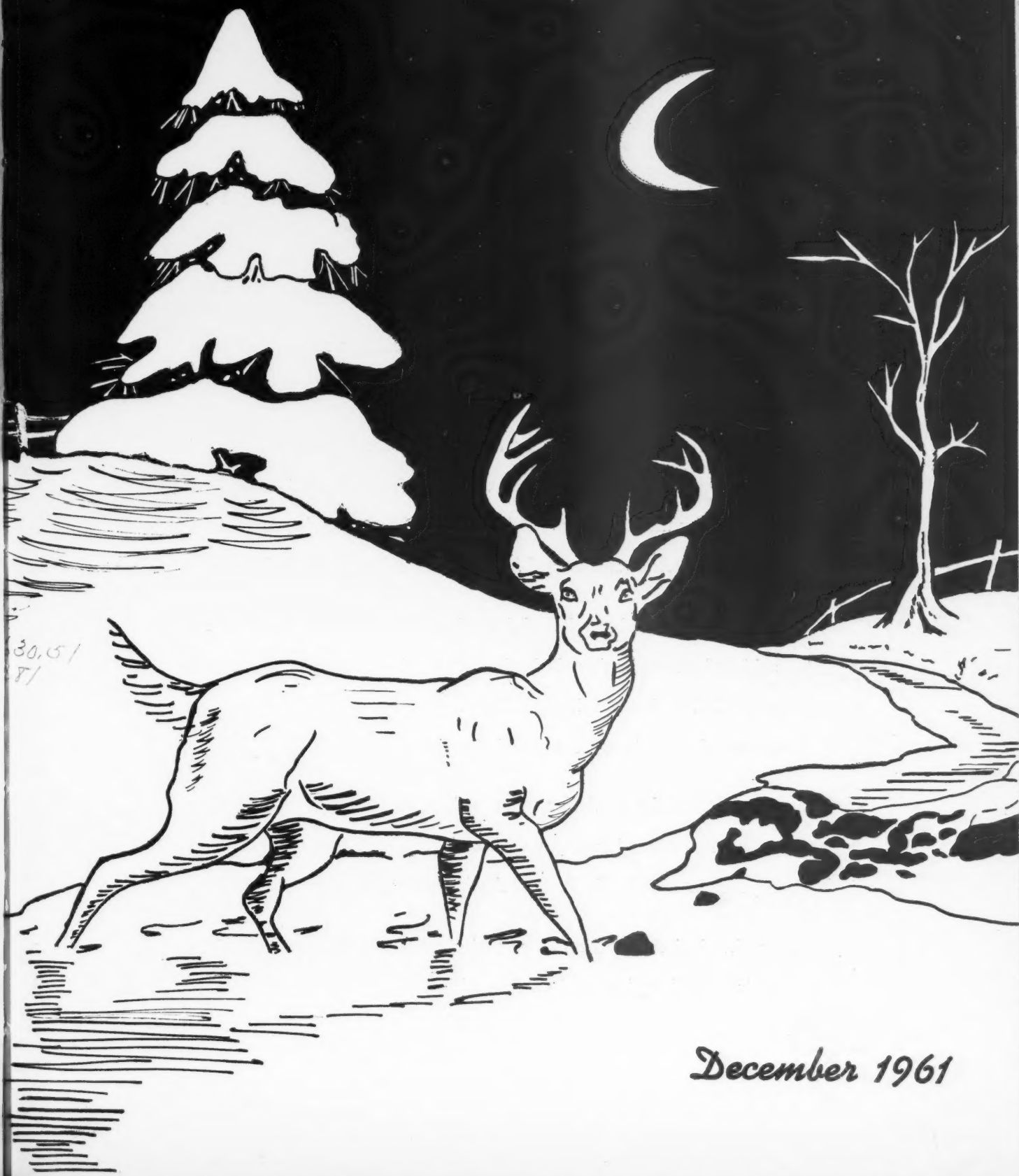


Cornell Countryman



December 1961

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The First Farmer Was The First Man . . .

and, according to Emerson, all historic nobility rests on possession and use of land.

The graduating seniors of the New York State College of Agriculture, '62, do not feel Mr. Emerson's statement is complete. They know that today's agriculturist must be trained in many areas before possession and use of land is economically profitable.

While receiving this training, eighty of the above seniors have achieved an academic nobility by ranking in the upper 27 per cent of the 292 students in the class. Their quest for knowledge is as concentrated as their areas of specialization are varied.

Most of the credit for advances in agricultural practices is due to the "know-how" these young Americans obtain through study and experimentation in Colleges of Agriculture such as ours at Cornell.

With the tools the college makes available, the graduates face their related agricultural careers with confidence.

Cornell Countryman

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1962

Editorial

Advice on Arts Courses

WALKING through the hallowed halls of Balch the other day, I overheard a perplexed coed's conversation with her roommate. "I don't know what to do. I have three more social science hours to complete. Should I take history or government?" she asked. "I took history and loved it," was the reply. "Well, should I take History 104 or 106?" the coed queried.

Roommates are good for many things. But they're not always the best ones to tell you how to utilize your Arts hours to your greatest advantage. A course or professor your friend enjoyed may not be equally suited for you. Individual tastes vary greatly—even between the closest of friends.

I'm sure many of you suffer from "pre-registration pangs." How do I know which course to take if they're both described the same way in the catalogue? Which would I enjoy more—government in theory or government in practice? Will I be getting a history of facts or a history of ideas? I have an appointment with my advisor in an hour and I still don't know what to do. Maybe he can help me. But how would he know about Arts College courses? He's a professor of animal husbandry."

You're right. He probably doesn't know a thing about the courses causing your dilemma. Well, what do you do—pick something out of a hat? No, you can't afford to make mistakes when you've got so few credits available to you. There's a much better solution: the Student Academic Advisors.

These advisors are honor students majoring in one of the seven Arts College departments presently participating in this program: economics, English, government, history, mathematics, psychology, and sociology. Each student is familiar with most of the courses in his department. And if he can't answer your questions, he will send you to an advisor who can.

What can a student advisor tell you? He can probably answer all the questions posed above. He can tell you where a professor places his main emphasis and what he expects of his students, whether he lectures from a well-organized outline or off the top of his head, to what level of maturity the course is geared, and many other bits of information you'll find helpful in making the proper choice.

How can you get in touch with one of these advisors? Just call the department you're concerned with and ask for the name, address, and phone number of a student advisor. Or if you feel hesitant about calling a perfect stranger, walk into the department office and write your name and phone number on the list posted for this purpose. A student advisor checks this list daily and will contact you immediately.

The eyes of other Arts College departments and other colleges are on this program. If it is used frequently and successfully this year, they may establish similar setups for their respective fields. Wouldn't you like to know more than your advisor can tell you about those ag courses you're thinking of taking? Here's your chance to start the ball rolling. Use the present Student Academic Advisor Program effectively, and your college may have one next year.

But remember, you're not just furthering a good cause by using this program. You're gaining from the knowledge and experience of others around you. Be sure you use your precious Arts hours wisely. Contact a student advisor before you have to decide on a program, and perhaps next time those "pangs" won't plague you.

J.E.B.

Letter to the Editor

Aggie in Sweden

TO THE EDITOR:

As the 1961 Swedish Exchange Scholarship student, I should like to direct this letter to those sophomores who are eligible to apply for this scholarship in 1962.

I left New York City June 21, on board the Swedish American Line's M.S. Kungsholm. Immediately, I knew I was going to have an experience I would never forget. During the days on board there were many activities—from indoor gymnasium swimming to trap shooting off the stern. Every evening there was dancing, various games of chance, and many other activities to suit different tastes. Besides all the fun, the friends I made, both American and Swedish, was one of my most rewarding experiences. I now have many addresses all over Europe as well as America, and I feel free to stop in at any one of them any time.

From the boat I went directly to a farm in southern Sweden. This also proved to be a wonderful experience. The farmer and his wife took me to many places in the area. When I began to know my way around, they let me use their car to make my own excursions. Of course, it wasn't all "eat, drink, and be merry" on the farm. There was also work to be done. Although most of the exchange students before me worked on the farm for two months, I worked for three, and didn't leave until September 28. I came directly to school at Uppsala which is about 45 miles northwest of Stockholm.

During my first day here I participated in Dag Hammarskjöld's funeral as part of a student honor guard. Since then I have been taken on a number of student tours to Stockholm and other cities surrounding Uppsala.

You can study almost any phase of agriculture here. I will be taking courses in agricultural marketing, genetics, microbiology, milk composition, and national economy. I will also study Swedish, although I am picking up a great deal now just by listening to conversation and asking questions.

Social activities assume considerable importance here. The school is quite small (250 students), but there is a large university and several home economics schools nearby. Therefore, there's dancing two or three times a week, or you can enjoy an informal social gathering almost anytime at the International Club. There is also ample opportunity for horseback-riding, seasonal sports, and other athletic activities.

So far I have had a very busy and interesting time in Europe and am looking forward to much of the same. I've begun to plan travel trips, possibly to Russia, and definitely to the Continent and England.

If anyone has any questions about life here in Sweden, I would be glad to answer them. Also, Leslie Small, last year's exchange student who is now at Cornell, should be contacted. Best of luck to all those who try for the Scholarship.

Frederick F. Hess
Kronasen 4
Lantbrukshogskolan
Uppsala 7, Sweden

There will be an open meeting for all sophomores interested in the Swedish Exchange Scholarship Program on December 7 at 7:30 in Warren 131. Hear a talk, see slides, get your application.

We May Inherit

More From Mother

**Dr. Srb, Cornell geneticist,
finds inheritable factors in
cytoplasm.**

by Elizabeth Pomada '62

MOST of us know that we inherit characteristics from both our parents through genes in the chromosomes of our mother's egg and father's sperm. The chromosomes are located in the nuclei of these initial cells. But do you know that there are some things inherited only through the cytoplasm of the cell?

Dr. Adrian M. Srb, world renowned geneticist of the College of Agriculture, recently spent 12 months in France, working on these extra-nuclear genes. "One of the few firm attributes you can use in defining life is reproduction. You can't conceive of it without thinking of a system of inheritance," states Dr. Srb, who is probing into the problem of unusual genetics systems.

His work is sponsored by the National Institutes of Health. They want to know "what makes each cell different, whether it's environment or heredity." In the instances studied by Srb, the differences are hereditary but not due to chromosomal genes. "There are aspects of cellular differentiation both in normal growth differences, like those between skin and nerve cells, and in the sudden abnormal growth characteristic of cancer," observes Dr. Srb. The chromosomal genes in the cells of a given being appear to be the same. Where then does the differentiation come from, if not from the chromosomes?

Previous work a clue

Before Dr. Srb's work, a few instances of maternal inheritance were known: all progeny were like the mother and unlike the father. This was a clue that cytoplasmic genetic systems may exist, since the female contributes chromosomes and all the cytoplasm which goes into the fertilized egg, while the male contributes just chromo-

Dr. Srb watches a lab technician use a micro-manipulator and microscope to isolate single cells' inheritable material.



somes. These scattered instances were found by chance.

Higher plants offer a few examples of maternal inheritance—cases in corn, onions, and sugar beets that have turned out to be useful tools in breeding hybrids. The phenomenon has been used practically but with little understanding of its basis.

Dr. Srb is working with the bread mold *Neurospora* to get enough instances of maternal inheritance to see whether he "can induce a series of changes in the bread mold that represent changes inherited by non-chromosomal genes."

Microorganisms, like *Neurospora*, are convenient to work with. Each sexual generation is only two weeks long. Each cell has only one of each kind of chromosomal gene. Genetic analysis in *Neurospora* is therefore easier than with the majority of organisms, where each kind of gene is represented two or more times in each cell. Dr. Srb also finds *Neurospora* convenient because it can act either as a male or female in experimental matings.

Non-chromosomal inheritance shows up when one culture acts differently when used as a male than when used as a female. Since the *Neurospora* will also reproduce asexually, the experimenter can use genetically identical organisms as both male and female.

Only females show factors

Dr. Srb finds that the heritable cytoplasmic factors he studies are reduplicated and reproduced as long as the culture is used as a female. When used as a male there is no inheritance of these factors, and the cytoplasmic factors are lost. *Pokey-ness* is an example of such a factor. It results in a slowing of the growth rate.

Using a dye substance called acriflavin, Dr. Srb has induced a series of mutations that show maternal inheritance. The fifty isolations successfully accomplished in France provide a relatively large number for study. Only two had been observed up to this point. "In some cases there's been enough



Photo Science

Normal *Neurospora* surrounded by mutant forms.

preliminary work to give an idea of the nature of the chemical alterations resulting from mutation. It seems to be a change in the cytochrome systems which act as mediators of respiration in the cell," according to Dr. Srb. Now he wants to find out whether these fifty instances all represent different ele-

ments in the same system or whether they represent a series of independent systems. Geneticists know about genes and chromosomes. They constitute the most important part of heredity. Is there something more? Do these examples point to one new theory?

Luxurious lab

Dr. Srb worked in Gif-sur-Yvette, just outside of Paris. The Sorbonne's well equipped lab where he did his research is on the grounds of a picturesque ancient chateau, complete with elegant formal gardens. As a guest of Professor Boris Ephrussi, Dr. Srb conversed daily with three of the half dozen or so scientists in the world highly competent and interested in his research subject. M. Ephrussi experimented with yeast, Phillippe L'Heritier with fruit flies, and Georges Rizet with a kind of dung mold. All three are also working on "extra-nuclear genes."

Dr. Srb is a versatile individual. He majored in literature at the University of Nebraska. Later, he discovered he "could do more original work in science" and switched in midstream to genetics, which he

studied in Stanford's graduate school. After receiving his Ph.D. in biology in 1946 and working at Stanford for a year, Dr. Srb joined the staff of the plant breeding department here at Cornell. He still reads a fair amount of literature with great pleasure and has an active amateur's interest in music. "Piano playing," he finds, "is one way to relax."

All research is applicable

Dr. Srb designates his work as pure research. He says, "This unusual kind of heredity offers a challenge. We don't know the scope of its importance or the rules of the game." He defends this pure research (that is, experimentation that has no immediately obvious application) because "any bit of knowledge you accumulate has worth and can ultimately be applied."

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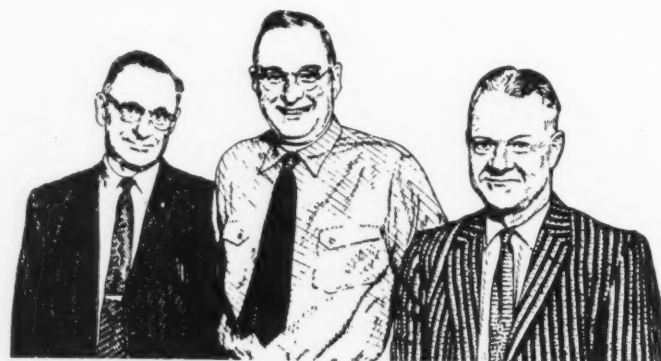
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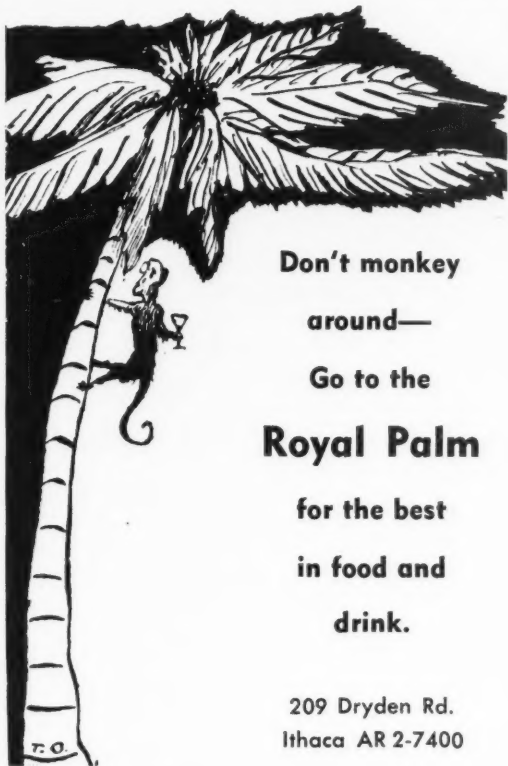
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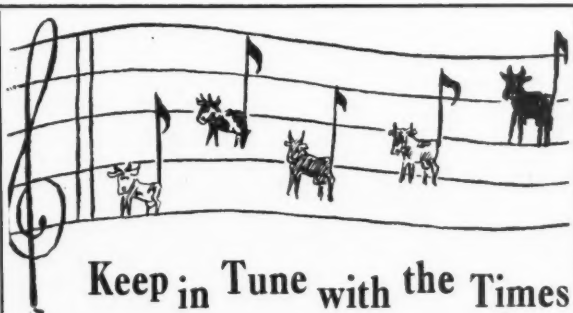
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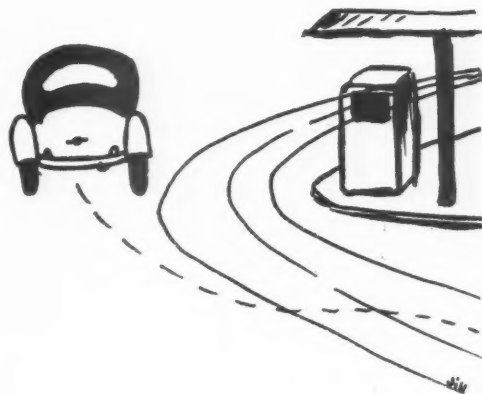
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Some people scratch
below the surface and
get delicious results.

Ice Fishing - For Fun and Profit

by Michael Dahlberg '62

WHEN you have a pike on your line, fighting for its life, you experience the thrill of ice fishing. The discomfort of cold winds, snow, and bright sun glaring off the ice all seem worthwhile.

Hundreds of ice fishermen converge on Oneida Lake on a weekend to pursue the abundant fish and the thrill of catching them. The anglers and their shelters give life to the otherwise barren surface of the ice.

Little gear needed

You need little gear for ice fishing. The necessities include warm clothes, a fishing license, a spud or axe to chop holes, bait and container, and "tip-ups." The "tip-up" is the actual fishing apparatus. It is simply a stake with a wire on the end of it. For fishing, the line is uncoiled off the vertical, stable stake, and strung through an eyelet of the wire into the water to the correct depth. A lowered wire,

indicated by an attached flag, indicates a strike.

The equipment often includes a sled, hand-warmer, ice shanty, and wind-breaker—frequently nothing more than a used Christmas tree. The ice shanty is the symbol of the ardent and comfortable ice fisherman.

The walleye pike or pikeperch is the prize species taken. Its fighting ability is notorious but its taste is well worth the struggle. The scrappy yellow perch are caught in greater numbers than any other fish. Occasionally a lucky angler can fill a burlap bag with perch in a day. Other fish caught through the ice include the lawyer (ling, burbot), pickerel, northern pike, and rarely, catfish and silver bass.

Lawyers are popular because they are large and abundant. But they are disliked because most people find them unpalatable. Unlike the other fish, which anglers eat, the lawyers are usually left on the ice where they are consumed by hungry gulls.

The ice fisherman's lament is the mudpuppy, a four-legged aquatic salamander which has an offensive habit of stealing bait minnows off the fish hooks. The fisherman's solution—keep that hook off the bottom.

Danger—beware!

But all is not milk and honey out on the ice. Many a fisherman has had a frightening experience. A plunge into the icy waters is common to adventurous "early birds" who gamble with the weak ice. They are often accompanied by their equipment and automobiles. Thin ice is found at the mouths of streams and in weak areas formed where the ice pushes and cracks. Oneida Lake's fierce snowstorms are another source of danger.

The annual "freeze-over" usually begins in December. The shore and bay waters freeze first because the shallow water cools more rapidly. Waves in deeper water retard this freezing.

The "freeze-over" may be directly followed by more freezing, snow, melting, or a combination of conditions. A snowfall may be great enough to discourage all fishing by burying "tip-ups." Slush usually forms temporarily on the ice, sometimes making travel difficult and filling fishing holes. The conditions vary much each year but they usually allow fishing for most of the "freeze-over," from December to March.

Added attractions

Some find the diversity of color, structure, and content of the lake ice as interesting as the fishing itself. The white, blue, and black ice may be as smooth as a mirror or corrugated, usually varying in different areas. Anything that can float in the air or water might be found preserved in the ice. The shoving ice often forms into elongated ridges.

The ice melts away along shore in March, and the water opens. As this open water grows, animals and plants appear which were dormant or hidden during the long winter. The process continues outward until a wind shoves the ice upon the shore and islands where it forms crystalline stratified ridges. The "tip-ups," bait buckets, and shelters either sink or become part of the fascinating pot pourri which can be found washed up on shore in the spring.

Practice good management

Considerable care must be taken to keep this central New York State lake the excellent fishing area that it is. The Oneida Lake Association is very active in this

project.

Drs. J. L. Forney and A. W. Eipper, Cornell University biologists, are conducting a long-term fishery research program on Oneida Lake. It is aimed at determining management methods.

New regulations have recently been enacted for Oneida Lake due to increased fishing pressure and more scientific knowledge of the lake's fishing populations. The legal

number of ice fishing lines and limit of walleyes per day have both been reduced from 15 to 10 per person. Also the sale of Oneida Lake pike is now illegal.

Oneida Lake ice fishing is a sport with discomforts and present and future problems. But the challenge is being met with the vigor needed to assure the future of the unique and delightful experiences that ice fishing can provide.



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Alumnus Advises

How To Get Ahead

**Brains are only part of the story.
Willingness and hard work spell
success.**

by George Abraham '39

TODAY, it takes more than brains to get ahead! To find your place in the business world may be a bigger job than you think. Opportunities are great, yet it's still hard for some graduates to find (and hold) a job in this land of opportunity. Why?

After being in business for nearly a quarter of a century, I'd like to pass along a simple tip or two that might guide a student who's ready to spring for employment.

(1) The thing you should think *least* about is wages. Sound odd after spending thousands of dollars for an education? No. Experience is what you're after *first*. Once you get it, you're on your way. Not many bosses are going to start you out high, just to break you in. If they did, you'd break them. Start low, if necessary, and work up. Most successful men have done this.

(2) In applying for a job, better learn to write a good letter. Sounds elementary, but not 1 in 10 students knows how to cook up a good letter. Make it concise, original, tight, neat and **DON'T PUFF YOURSELF UP TOO MUCH!** A sharp employer can size you up from a down-to-earth letter, and interview.

About The Author

GEORGE ABRAHAM, better known as "Doc," specialized in floriculture at the College of Agriculture. He and his wife, Katherine, write the "Green Thumb," a column which appears in a number of weekly newspapers. His interest in journalism began on the staff of the *Cornell Countryman*. In addition to journalistic pursuits, he and Katy operate a greenhouse at their home in Naples, New York.

Letters should be typed, written on good paper, addressed to the employer *in person*, never "To whom it May Concern" or to "The General Manager." Unnamed letters are food for the wastepaper basket. And if you happen to start in business for yourself, choose a good letterhead. This is the cheapest piece of promotion you can have. People judge you by the letter and the letterhead you use.

(3) When writing, send along a portfolio listing citations, articles written, honors, experience (if any). Send this first class with your letter, not separately. You've got to build an image in the human mind miles away, and these are cards up your sleeve.

(4) It's not always easy to tell what kind of job you want, but you should have some idea. Want it hard enough, and you'll get it! Once it's yours give it your best. Hard work is still the old fashioned American way to get ahead. Do extra things. If I were a boss here's one test I'd use to hire a man. First I'd drive a nail into a board and leave it on the road. I'd ask the applicant to drive up the road. If he drove *around* the board, I'd give him less consideration than if he stopped and picked it up.

(5) Once you land a job and get experience, keep your eye open for better things, if you're not content. The "Another-day-another-dollar" man is an unhappy man, and he seldom gets any farther than the time clock he punches. There's nothing morally wrong with using your present position for "experimental" purposes if you still give your boss a full day's work. Good men climb and move around as they mature, gain experience, and find the job they like better.

(6) My final advice is: Don't be a college boob! Educated fools stand out like a sore thumb. In other words, don't be a "know-it-all," just because you have a degree. Remember, your boss may not have finished high school, but he may still be a great success. If manual labor is ever needed, do it willingly. Perseverance, a keen interest in your work, plus a college training will land you on top.

Happy Landing!

African Women Advance Higher Education

by Hillary Brown '63

AFRICAN and American women educators have similar educational difficulties. Educated women in both areas present the same sociological problem. They complete their schooling but cannot always apply it. Consequently, the societies are deprived of a valuable source of knowledge.

Another difficulty common to both is financing education. The cost far exceeds the average income of African families. In the U.S. this holds true although on a smaller scale.

The educated woman in both cultures has not commanded the full respect she deserves. The status of women students is finally beginning to rise and their role in society acknowledged.

These and other related problems were discovered at two workshops set up last April by the International Cooperation Association in Africa. The group consisted of seven women educators from the U.S. who are specialists in various educational fields. Dean Helen Canoyer of the New York State College of Home Economics at Cornell University represented the fields of higher education and home economics.

One workshop for Central and East African nations was held on the Royal College Campus in Nairobi, Kenya, and the other for West African nations was on the Ibadin University College campus in Ibadin, Nigeria.

Attending the workshops were 37 delegates from 14 African nations. Each woman is headmistress of a school or outstanding educator within her country.

Workshops are successful

The meetings proved very successful. This was the first time these women met as a group to iron out their problems and to initiate educational policies by the workshop technique. The main group was divided into smaller discussion sections each conducted by one of the seven American women. Each one could then concentrate on a specific area. Within the groups the women discussed their own experiences and were



Three of the 16 African women educators who visited the College of Home Economics to study education for women.

amazed to learn that many of them had to cope with identical problems. This was surprising since some women taught in small rural schools while others came from educational centers in the large cities.

The group which Dean Canoyer conducted discussed the problems generally related to domestic science. These included embroidery, house cleaning, health and nutrition, and how to provide educational opportunities for the junior high school girl. No one was given formal instruction. Rather, each problem was discussed in turn, with major participation from the African women themselves.

Women, it was found, are still not treated on an equal basis with men. Scholarships are invariably offered to men only. In competing for jobs, men are chosen in preference to women. Many intelligent girls who graduate from secondary schools cannot afford to attend college and are not given jobs. This creates a disciplinary problem, for girls are not able to apply themselves toward any worthwhile purpose.

Therefore the African women educators are trying to provide educational opportunities for qualified women in hopes that with this training they will be able to get jobs. Even with the many obstacles facing them, these women and most Africans are strongly aware of the need for education.

Unfortunately, the great distance women must travel to attend schools and the shortage of facilities creates a great dropout and "wastage" problem after the elementary grades. This in turn limits the output of teachers, leaving a gap in the teacher-student cycle. Because these countries have emerged so rapidly from their tribal status to a state of educational awareness, there aren't enough qualified people to occupy the top positions in the school system.

African education is gaining its greatest momentum at the present time and needs an educational philosophy and the proper methods for its support.

To further this goal, 16 of the 37 women educators were invited by their American friends to visit our schools and to observe teaching methods during a three month study tour. While staying at Cornell they visited classes in Ithaca High School, at the State

University College in Cortland, the Sherwood Central School near Auburn, as well as in the College of Home Economics.

The Agency for International Development sponsored the trip for the African women. In September, after a brief orientation in Washington, the women traveled to Ithaca. Dean Canoyer and many of the faculty and alumni served as hosts, welcoming their guests in their homes. The harmony which developed immediately led to an interchange of ideas and observations. Many of the African women felt that with the age of automation, the American housewife was free from domestic responsibility.

Women are the same everywhere

The guests' curiosity about daily life led them to exchange notes on home management, recipes and foods, fashion styles, child rearing, and infant care with their American hosts. The informal discussions and the close contact made them realize that women the world over share the same daily routine, in spite of cultural differences. Their main interest centered around the family and its relationships, and the women heard lectures on this subject.

A tour of the Cornell campus greatly impressed the African women. They felt that Cornell students were particularly fortunate because they receive an education and at the same time are surrounded by the beauties of the natural world.

Following their stay at Cornell, the women traveled throughout the country making stops in California and North Carolina. They will return to their own countries about December 8, better informed about educational philosophy and methods in the U.S. They hope to apply this new found knowledge to education in their own countries.

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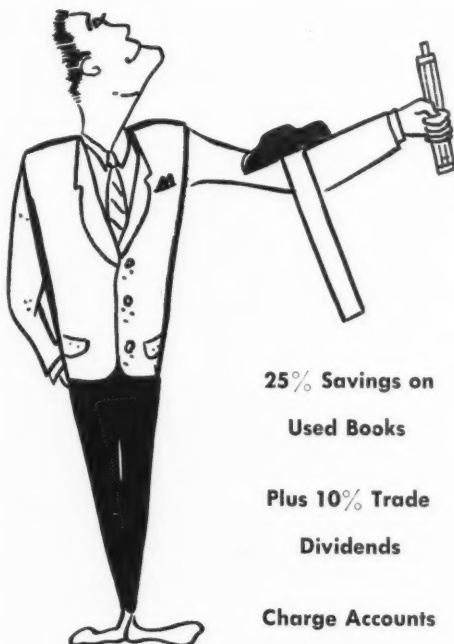
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A new electronic device lets scientists see the quality of meat on animals while they are still alive.



A new cottage cheese flavoring process will give consumers their choice of a bland mildly flavored or highly aromatic product.

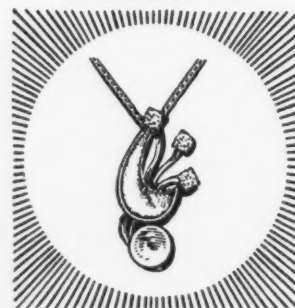
The supply of Christmas trees being grown far exceeds the demand. In N.Y.S. it is estimated that less than one-fourth of the trees reaching marketable size will be sold because of poor quality.



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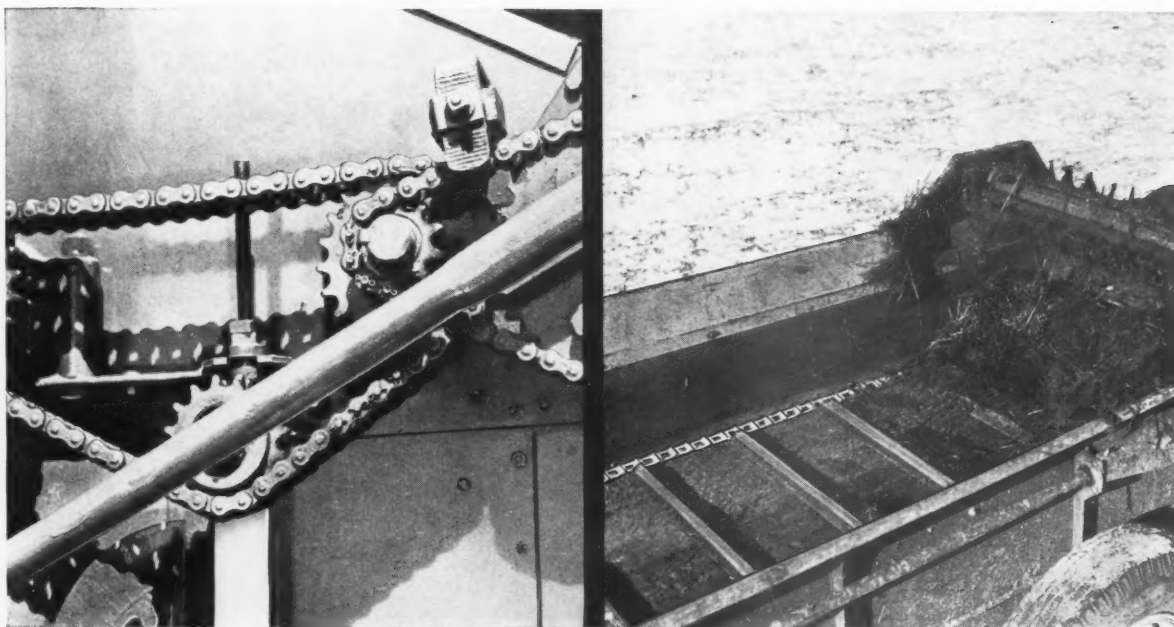


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
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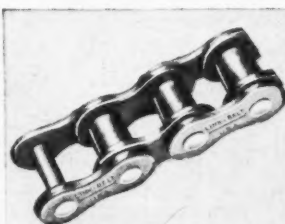
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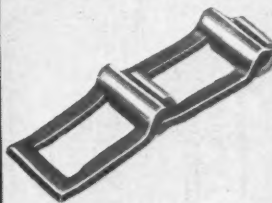
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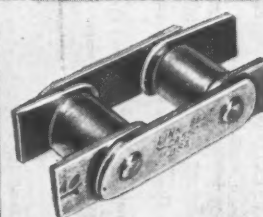
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